

**REMARKS**

**These remarks will replace the remarks filed on March 17, 2008:**

Claim 1 has been amended to more clearly define that which Applicants claim as their invention. Support for the amended Claim 1 can be found, for example, in Example 2 and Fig. 3. Thus, no new matter has been added.

Upon entry of this Amendment, which is respectfully requested, Claims 1-2 and 4-6 are all the claims pending in the application, of which Claims 4 and 5 have been withdrawn.

**Response to Rejection Under § 103(a)**

Claims 1 and 2 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sawada et al (U.S. 5,404,032) in view of Kuroda et al (U.S. 5,831,296).

Applicants submit that this rejection should be withdrawn because Sawada and Kuroda do not disclose or render obvious the presently claimed compound semiconductor epitaxial substrate, either alone or in combination.

The Examiner states that Sawada shows a compound semiconductor epitaxial substrate comprising an InGaAs layer as a strain channel layer, an AlGaAs layer as an electron supplying layer, and GaAs layers [2,22] laminated respectively in contact with the top and bottom surfaces of the strain channel layer.

Sawada discloses non-doped GaAs layers [2, 52] in contact with the top and bottom surfaces of the InGaAs layer [51], respectively. Further, Sawada discloses that an n-AlGaAs layer [5] is formed above the GaAs layer [52]. However, Sawada discloses that the GaAs layer [2] beneath the InGaAs layer [51] serves as a buffer layer. See, col. 3, line 63, col. 6, lines 55-64 and Fig. 9.

In contrast, present independent Claim 1 recites that the non-doped GaAs layer under the InGaAs layer serves as a spacer layer. *See*, Example 2 and Fig. 3.

Accordingly, the present claims are not taught or rendered obvious by Sawada et al.

Kuroda et al is relied upon as teaching that the electron mobility of InGaAs is about 8500 cm<sup>2</sup>/Vs when the In content in the InGaAs is between 0 and 25% (see column 5, lines 5-14 of Kuroda et al). Kuroda et al does not make up for the deficiencies of Sawada et al.

As discussed on pages 24-25 of the present specification, high electron mobility is achieved, according to the present invention, in a strain InGaAs channel system on a GaAs substrate, and such a high electron mobility has not previously been obtained, with the exception of a system in which an InGaAs layer is used as a channel layer and is lattice-matched with an InP substrate, or alternatively in a system in which an InGaAs layer is used as a channel layer and lattice-matched with a buffer layer having almost the same lattice constant as that of InP formed by a metamorphic technology on a GaAs substrate. The present invention is applicable to conventional device processing technology without modification because the present invention requires neither an InP substrate, which is expensive and hard to deal with, nor a special metamorphic buffer technology. In addition, the electron supplying layer or buffer layer of the present invention is basically the same as that of the conventional pHEMT. Accordingly, Applicants respectfully submit that the presently claimed invention is not rendered obvious by Sawada in view of Kuroda.

In view of the above, reconsideration and withdrawal of the §103(a) rejection of Claims 1 and 2 based on Sawada et al in view of Kuroda et al are respectfully requested.

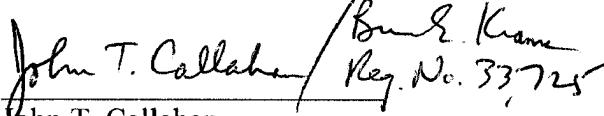
SUPPLEMENTAL AMENDMENT UNDER 37 C.F.R. § 1.114(c) Attorney Docket No.: Q88662  
Application No.: 10/540,513

Applicants submit that Claim 6 is patentable over Sawada et al in view of Kuroda et al for at least the same reasons that Claims 1 and 2 are patentable over Sawada et al in view of Kuroda et al as discussed above.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
John T. Callahan / *Bruce E. Kram*  
Reg. No. 33,725  
John T. Callahan  
Registration No. 32,607

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE  
**23373**  
CUSTOMER NUMBER

Date: April 9, 2008